

### CARTOGRAPHIC SYMBOLS

	Post Survey Route with kilometre post and reverse kilometre post		Telecommunications cable position, in Service/Out of Service/Planned (As found in magenta)
	Beach Mark/Alter Course		Pipeline position
	Survey Route		Power cable position, in Service/Out of Service (As found in magenta)
	Coastline (from Admiralty Charts)		Chart Matchline
			Territorial Sea / EEZ limit

### BATHYMETRY

Bathymetric contours in metres. Contour interval may be reduced to aid in clarity. All bathymetry reduced to Lowest Astronomical Tide (LAT)

Downslope gradient in degrees (°) as measured over the shortest significant distance

Approximate limit of swath bathymetry coverage (shown only in areas of flat seabed)

### SEABED FEATURES AND SHALLOW GEOLOGY

	CORAL		Isolated sonar contact with reference number (length x width x height in metres where measurable; n/nh = no measurable height)
	Gas seepage area with predominant sediment classification		Linear sonar contact, dashed where partially buried
	Boulders with predominant sediment classification		Unidentified magnetic anomaly with reference number and amplitude
	Fine sediment (predominantly CLAY/SILT)		Cable/Pipeline position, as determined by magnetometer, with reference number and amplitude
	Coarse sediment (SAND and GRAVEL)		Seabed sample location with reference number
	Very coarse sediment (COBBLES and BOULDERS)		OS (Grab Sample) DS (Diver Sample) DP (Diver Probing) SP (Beach Probing)
	Submerged ROCK with predominant sediment classification (sediment thickness = target burial depth)		MiniCPT (CPT) Location with reference number
	ROCK outcrop		Small outcrop of rock with height in metres if discernible
	HARDGROUND (Very dense/consolidated sediment)		Seabed DEPRESSION or POCKMARK with diameter (d) and depth (D) in metres, where discernible
	Sediment or feature boundary		Orientation of SANDWAVE crest (with wavelength and height in metres)
	Inferred Sediment or Feature Boundary		Orientation of MEGARIPPLE crest (with wavelength and height in metres)
	Approximate limit of side scan sonar coverage and survey swath		Orientation of sediment ribbon
	Seabed scar (trail or anchor)		Fault with depth below seafloor (fluctures on down side)
	Charted or reported wreck		Isobath Contours shown at 1m interval with labels every 1m
	Dumping ground database position		Located wreck with reference no. (length x width x height in metres where measurable)
	Well / Platform		Anchorage Area / Fishing Area (Admiralty chart position)
	Oil Concession Block		Anchorage / Fishing Prohibited (Admiralty chart position)

### CHART COMMENT:

### GENERAL NOTES:

SURVEY VESSEL	M.V. Ocean Endeavour	M.V. Capibó Eng III
Surface positioning system	Furuno Starfix HP 1000SS	Applan POSMV WaveMaster, Verpos LDS
Underwater positioning system	Scantyper Ranger 1 USBL	Reson Seabat T-20
Bathymetry	Kongsberg EM100, Kongsberg EM120, Kongsberg EM300, Kongsberg EM60 Combi	
Morphology and stratigraphy	EdgeTech 4200 FS, Kleinberg Coda and pager, SES Saugbrø SSS/SBP	EdgeTech 4200 MP, Kleinberg Geosonics, Geopulse
Magnetometer survey	Geomatrix S&Z	Marine Magnetics Seagay
Geotechnical	Kullenberg Piston Core, Neptune 3000 CPT	Van Veen Grab Sampler

Target burial depth: 1.0m below seabed

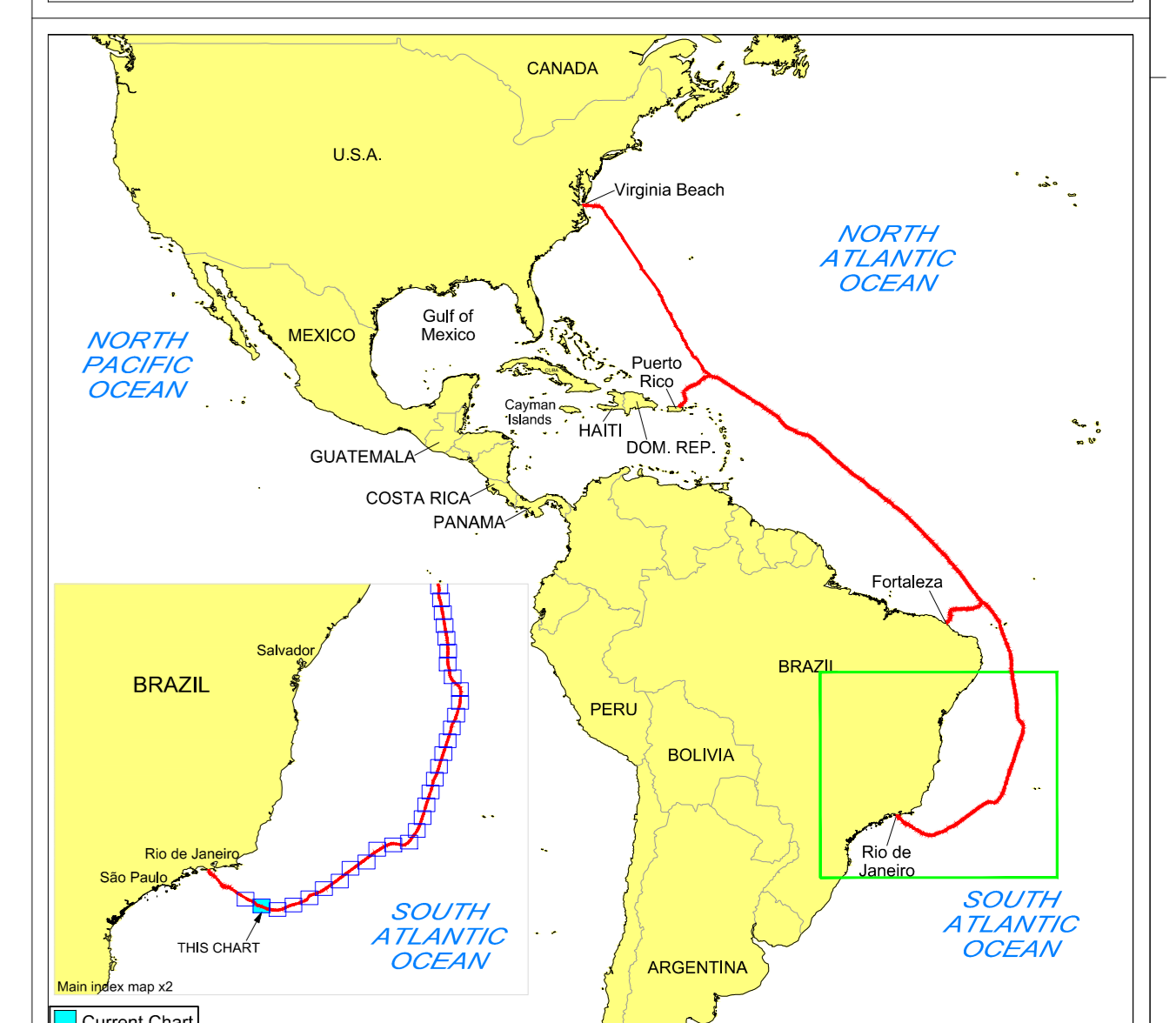
Descriptive Terms and Definitions: The criteria used for interpretation and descriptions are presented in the Survey Results

Multibeam Processing Parameters: Depths in metres, reduced to LAT

Predictions used from tide stations: Rio de Janeiro, Brazil

### GEODETIC PARAMETERS:

Projection	MERCATOR	Scale Factor	1
Longitude of Origin	53°W	Datum	WGS84
Standard Parallel	7°N	False Easting	3 000 000
Semi-Major Axis (a) (metres)	6378137.000	False Northing	5 000 000
Reciprocal Flattening (1/f)	298.257223563		



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Survey Date: MAY to AUGUST 2016

Scale: NATURAL SCALE 1 : 100,000 at 7°N

(At Mid-Latitude of Chart)

TRUTH SCALE 1 : 91841 ukm

Purchaser: **TELXIUS** (Enabling Connectivity)

Contractor: **Alcatel-Lucent**

Surveyor: **Gardline**

Project Name: **BRUSA CABLE ROUTE SURVEY**

Document Title: **SEGMENT 7 NORTH-UP CHART CHART NO. 042 OF 071 (KP 3259.545 - KP 3358.168)**

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**REVISION 01**